

ATTACHMENT D

**AIRBORNE COMMUNICATIONS NODE
SOLICITATION QUESTIONS AND ANSWERS**

MDA972-98-R-0006

MARCH 26, 1998

ACN Solicitation Questions and Answers

1. The risk of a successful demo will increase if we do not have a specific aircraft identified early in the phase 1 program. When will a decision be made on the specifics of the GFE aircraft (707 or larger) that the Government is willing to provide.

ANSWER: The Government is actively working on identifying a Phase I aircraft and intends to inform the Contractors of the specific aircraft early in Phase I. The Contractors are reminded that they are free to propose their own aircraft for the Phase I.

2. If the demo aircraft is provided by the Government, what support will be included (Fuel / Pilot / Maintenance, etc.)? Ref. Solicitation page # 3 section 1.0 "General Information".

ANSWER: The specific support will depend upon the aircraft chosen. For the purposes of the Phase I proposal, Contractors should assume that the Government will arrange and separately fund the necessary support to include fuel, pilot and maintenance.

3. What is the expectation relative to the renovation of the loaned (GFE) aircraft once the demo is complete after month 17. Is the contractor expected to return the aircraft to the original (pre-demo) configuration? Ref. Solicitation page # 3 section 1.0 "General Information"

ANSWER: The specific requirement regarding renovation will depend upon the aircraft chosen. For the purposes of the Phase I proposal, Contractors should assume that they are responsible for demodifying the aircraft.

4. How will Teledyne Ryan be managed and funded so that all teams are equitably served and proprietary information is protected?

ANSWER: Teledyne Ryan will be funded separately as part of the Government team. The Government will ensure that all teams have equal, but not unlimited, access to Teledyne Ryan resources and information. Teledyne Ryan participants will be required to sign non-disclosure agreements with each team to protect proprietary information.

5. What are the Governments plans for obtaining authorization to use both military and commercial frequencies during the Phase 1 flight demo? For example, how will commercial frequencies be authorized if a Cellular/PCS system is demonstrated?

ANSWER: The Government will work with the Contractor to obtain authorization of military frequencies. The Contractor is responsible for obtaining authorization to use commercial frequencies. The Contractor should note that the title of an ACN service (e.g., cellular/PCS-like) does not imply implementation frequency.

6. What roles will FFRDC's and Government Labs be allowed to assume during ACN Phases 1 and 2? Can they be primes? Can they have second tier roles? Can they match program funds with other government funding like any second tier supplier?

ANSWER: There are no restrictions against Government Labs or FFRDCs competing in any capacity under section 845 authority unless they are on the Government team and are prohibited from participating due to conflict-of-interest concerns. Cost share is not required under this solicitation; any proposed cost share using other government funds will not be considered in the overall "best value".

7. In the DRAFT ACN Solicitation, Section 1.0, para 6, the Government wrote, "A Government-furnished manned aircraft will be provided, ..." What will the Government provide along with the aircraft? Pilots? Consumables (e.g., fuel) and maintenance? Flight hours? Who will install the ACN equipment on the Government-furnished manned aircraft? Will internal equipment be installed by the ACN contractor under Government supervision or will the equipment be installed by the Government following ACN contractor provided drawings? Same question for external antennas? Who will perform the needed air worthiness analyses? What government flight insurance will be carried for loaned equipment, contractor personnel?

ANSWER: The specific support will depend upon the aircraft chosen. For the purposes of the Phase I proposal, Contractors should assume that the Government will arrange and separately fund the necessary support to include fuel, pilot and maintenance. For pricing, the Contractor's should assume that they are responsible for installing all equipment on the aircraft.

8. If we choose to submit two proposals for ACN Phase 1, will the Government consider two awards to the same company?

ANSWER: Yes. All proposals will be evaluated independently.

9. Is the target User group for tactical battlefield multicast service the same target User group(s) for Paging and/or Cellular/PCS-Like services? Are there restrictions, thresholds, and/or goals for the number of unique User terminal devices (i.e., separate Cellular terminal, Pager, multicast terminal, etc.) and their capabilities to provide one or more of those services? For example, is it desirable to provide a single user device that

supports all those services? Ref. A2.1.4 Tactical Battlefield Multicast.

ANSWER: Not specifically. Although it is reasonable to expect that there will be significant overlap in users of these three services, it is not reasonable to expect that the target user group is identical.

As stated in the solicitation, it is a goal of the Government to allow the dismounted warfighter access to the ACN services via a single, highly flexible, multi-function device.

10. Section A2.1.6 states that "The surrogate satellite thresholds and goals are summarized as follows: (Threshold = 10 HDX channels, Goal = 20 HDX channels)." Section A2.1.7.2 states that "ACN should provide UHF LOS and surrogate satellite channels. The UHF thresholds and goals are summarized as follows: (Threshold = 10 HDX channels, Goal = 20 HDX channels)." It appears that the quantity of UHF channels as stated in A2.1.7.2 includes those defined in A2.1.6, such that the total number of UHF channels, (Havequick, 25 khz UHF LOS, DAMA surrogate satellite, and non-DAMA surrogate satellite) is 10 threshold, 20 goal. Is that the correct interpretation? Ref A2.1.6 Surrogate Satellite, & A2.1.7.2 UHF (225-400 MHz)

ANSWER: Yes, the total number of UHF channels is 10 threshold and 20 goal.

11. Section A2.2.2 states that the ACN SWAP goals are 100 cu ft, 450 pounds, and 5000 watts. Section A2.2.2 does not specifically define SWAP thresholds, although it states that the SWAP for the Global Hawk is 130 cu ft, 900 pounds, and 6000 watts. Is that the threshold SWAP? Please clarify.

In addition, Section A2.2.2 states that "Support of the goal SWAP and modularity characteristics facilitates payload integration on platforms that do not have the capacity of the Global Hawk HAE UAV (e.g., Predator or helicopter)." Section A2.2.4 states that "The helicopter-based airborne ACN payload, which will consist of a SUBSET of a full capability payload...." The two statements above appear in conflict with respect to SWAP implications. The statement in A2.2.2 implies full ACN capability at SWAP goals, the statement in A2.2.4 implies subset of capability at SWAP goals. Are SWAP goals stated in Section A2.2.2 for the full ACN capability or a subset of those? Please clarify SWAP thresholds and goals for the Global Hawk and for other platforms of interest. Ref A2.2.2 Size, Weight, and Power

ANSWER: Yes, the Global Hawk SWAP is the threshold SWAP. No SWAP parameters have been set for payloads for alternate platforms.

The overall program goal is to have all goal capabilities at the goal SWAP. The statement "The helicopter-based airborne ACN payload, which will consist of a SUBSET

of a full capability payload...." was not meant to imply a subset of capability at SWAP goals. The specific mix of capability is left to the Contractor to propose.

The following change will be made to the ACN solicitation:

“The helicopter-based airborne ACN payload, which will consist of a subset of a full capability payload....”

will be changed to

“The helicopter-based airborne ACN payload, which MAY consist of a subset of a full capability payload....”

12. It is expected that JTR will be fielded in the same timeframe as ACN. The JTR Draft ORD identifies the need for a contractor-defined data waveform. Is a contractor-defined data waveform with equal to or better than EPLRS performance acceptable? Ref. A2.1.7.3 EPLRS

ANSWER: EPLRS is a fielded asset that is being used by the Services and is included as part of the ACN payload to provide range extension and interoperability between EPLRS and other radios. Although the data limitations of EPLRS are understood, use of a data waveform that is equal to or better than EPLRS will not satisfy this objective.

13. Section 1.0 General Information, pg. 4 of 24 reads: "In addition to the ACN Phase 1 performance demo, it is the intent of the government to include demonstrations (Simultaneous if possible) of competing contractors hardware in 1 or more major US Military Training Exercises."

Does simultaneous mean all competitor's hardware at the same time or meaning simultaneous with the performance demonstration?

ANSWER: Simultaneous means all competitor's hardware at the same time.

14. Section 3.8.1 requests the inclusion of a projected PFP (Payload Flyaway Price) for the design.

Can the PFP be developed by a parametric approach, e.g. GE Price Program?

ANSWER: Yes, a parametric approach may be used for the Phase I proposal. The Government reserves the right to provide specific guidelines for PFP preparation during the execution of Phase I.

15. In the Draft Solicitation, on page 3 the deliverables for Phase II are described as "two (2) full capability airborne payloads and a specified complement of ground equipment."

They plan to procure three payloads (two full capability Global Hawk payloads and one scaled helicopter payload).

Is the "Scaled Helicopter Payload" a non-deliverable piece of demo hardware?

ANSWER: This is an oversight and will be corrected in the Final Solicitation. The helicopter payload is a deliverable.

16. Paragraph A2.6: Please provide more detail on what you are looking for in Phase I for both Data Circuit demonstrations.

ANSWER: The Government is looking for demonstration of the ability to provide an internet-like service and a high data rate secure circuit. Minimum parameters have been defined but the specific implementation is up to the Contractor.

17. Paragraph 3.8.2, last bullet: When you ask for a PFP in our Phase I proposal, our assumption is that your intention is for a projected PFP. Is this correct?

ANSWER: Yes, the Phase I proposal should include a projected PFP. The projected PFP will be refined during Phase I.

18. Paragraph 1.0, page 2, last paragraph: You discuss "ground-based" elements. Are there more ground-based elements above the RACE and MCE? If not, then will you list the other military assets which might be in the theater of operations which we might have access to support a reduced capability when ACN is not in the area? Our understanding is that we are not developing other ground-based assets besides the RACE and some functionality in the MCE. Please clarify what your expectations are for "graceful degradation" and what government assets are available to use.

ANSWER: ACN will support a variety of scenarios and thus a specific scenario from which a list of other military assets could be derived has not been defined.

Although the only ground-based element development specified is the RACE, the Phase II Contractor will be required to deliver a small number of subscriber terminals to demonstrate the functionality of the ACN services.

Graceful degradation is a goal of the ACN program. The specific implementation and any limitations are left to the Contractor to propose.

19. Paragraph 3.8.1. last bullet: In the first sentence, you state: "the proposal should include the expected results from the design effort, and the form in which the results will be available....." Does the word "form" mean format, media, or form of documentation?

ANSWER: Form of Documentation

20. Attachment A, Technical Thresholds and Goals sections A.1.2 lists the following documents that are not available from the ACN web site (<http://www.les.mil/acn>). How may they be accessed?

- Airborne Communications Node (ACN) Payload Development and Antenna Integration Study Highlights, < <http://www.les.mil/acn> >
- Tactical Common Data Link (TCDL) specifications
- Accords de Standardization (STANAG) 4175 (North Atlantic Treaty Organization (NATO) Secret): Link 16
- MIL-STD-6016: Link 16 Message Protocols
- MIL-SPEC-A3109210: critical item development specification for Enhanced Position Location and Reporting System (PLRS) User Unit (U), December, 1993
- Single-Channel Ground and Airborne Radio System (SINCGARS) System Engineering document, June 26, 1997, ITT Corporation # 83214186: SINCGARS Improvement Program (SIP)

ANSWER: The document "Airborne Communications Node (ACN) Payload Development and Antenna Integration Study Highlights" is misnamed in the solicitation. The correct name is "ACN Global Hawk Integration: Antenna System and EMI Mitigation System Design Development". The name will be corrected in the solicitation. It has been submitted for publication on the web page and should appear shortly.

The Contractor should contact the appropriate program office to obtain specifications.

21. Attachment A, Technical Thresholds and Goals sections A.1.2 lists the following websites with contents that are password protected. Request access be provided as soon as possible.

- Global Mobile (GloMo) Program, < <http://glomo.sri.com/> >
- Ultra Communications Program, < <http://www-er.rl.af.mil/UltraComm/> >

ANSWER: The password protection status has been lifted from some of the GloMo pages. GloMo project descriptions and POCs for each performer are listed on the DARPA GloMo web page, which is < <http://www.darpa.mil/ito/ResearchAreas.html> >. Contractors should contact the appropriate POCs for specific project information. Access to the Ultra Communications Program web page is under investigation.

22. How can we get information on the Airborne Imagery Transmission (ABIT) programs?

ANSWER: The Contractor should contact the ABIT program office.

23. Solicitation Paragraph 3.7, page 20, states "Legible graphics (e.g., figures, tables, charts, etc.) should be used where appropriate and practical . . .". We typically use the Arial font at no less than 8 points in figures, tables, and charts. Would DARPA accept this font and point size as "legible?"

ANSWER: Yes

24. Solicitation Paragraph 3.7, page 20, states "Electronic proposal submissions will be in Microsoft Office 95, ...". Our current company-standard software (Word 6.0, PowerPoint 4.0, and Excel 5.0) are compatible with and readable by the later versions of Office 95. Would DARPA accept files in these older, but compatible, versions?

ANSWER: Yes

25. Solicitation Paragraph 3.7, Page 19, states that "...each paragraph and subparagraph should have a separate identifier." We assume this requirement refers to only paragraphs with titles and that untitled paragraphs would not require a number (as in the solicitation). Is this correct?

ANSWER: Yes

26. Is the payload flyaway price (PFP) for 10 ACN's recurring build as it will be a follow-on to the option for 5 ACN payload deliveries which would bear the burden of amortizing the NRE costs?

ANSWER: Not necessarily. The option for 5 ACN payloads is for additional Phase II prototypes and is not a prerequisite to execution of the fixed-price, irrevocable offer for

10 units (i.e., the Government could elect to execute the irrevocable offer without executing the option for the 5 additional prototypes).

27. Since the "Cost Response" volume has no page limit do all the Proposal requirements for single space, single-sided, 12 point type etc., apply

ANSWER: No

28. Throughout the solicitation, the term "Internet-like" appears. This could be interpreted as "Internet protocols and services implemented in an Internet" or could be interpreted as "Internet extended for survivability in military environments." Which is correct?

ANSWER: "Internet-like" is used to refer to a Service based on connectionless message transactions where many transactions are asymmetric, involving short bursts of uplink user activity followed by either lengthy downlink data transfers from servers or short acknowledgments. The specific implementation is left to the Contractor to propose.

29. What capabilities are available through the DIL and on what basis?

ANSWER: The reference for the DIL is:
<<http://www.monmouth.army.mil/cecom/rdec/dil/dil-home.htm> >. The DIL is available for testing interoperability with legacy radios. If desired, DIL access will be coordinated and scheduled to provide each Contractor equal access during Phase I.

30. Is access to a contractor provided aircraft considered a discriminator?

ANSWER: No.

31. Please tell us the extent to which the ACN program is going to fund:

- Terrestrial infrastructure development
- miniaturization of electronics/payload
- re-packaging of existing system components into PCM physical form factor.

ANSWER: The ACN program is procuring an ACN payload and a RACE and during Phase II the Contractor will be required to deliver a small number of user terminals to demonstrate ACN payload functionality. ACN is not specifically funding terrestrial infrastructure development, miniaturization of electronics/payload, or re-packaging of existing system components into PCM physical form factor.

32. ACN must interoperate with terrestrial communications and battlefield assets including JSTARS, AWACS, etc. To what extent is ACN expected to control theater-wide communications? This can range from total management of network topologies and QoS to a simple repeater in the sky.

ANSWER: ACN will augment the communications infrastructure, it will not dictate or control the infrastructure.

33. How does DARPA suggest we make acknowledgments from pages such that it will be LPI/LPD?

ANSWER: DARPA is asking the Contractors to answer this question. Per Paragraph A2.1 ACN Communications Services, the Contractor is being asked to develop an ACN system design that, where applicable, comprises some level of LPI/LPD and A/J characteristics. It is up to the Contractor to determine how these characteristics are to be applied to the various ACN services.

34. At the third milestone (the CDR), is it possible to have a successful CDR and receive the payment \$600K payment but not be selected to continue on? In other words, will the competitor that is not selected to continue past CDR, still be paid the \$600K?

ANSWER: Yes

35. Is it possible to restructure the Milestone payment amounts to fund more of the effort earlier?

ANSWER: FY milestone payments are based on available FY funds. They can be restructured within the total represented for each FY.

36. Does an 11x17 inch fold out count as a single page?

ANSWER: Yes